Fish Agency Scenarios for BDCP Initial Operations Development

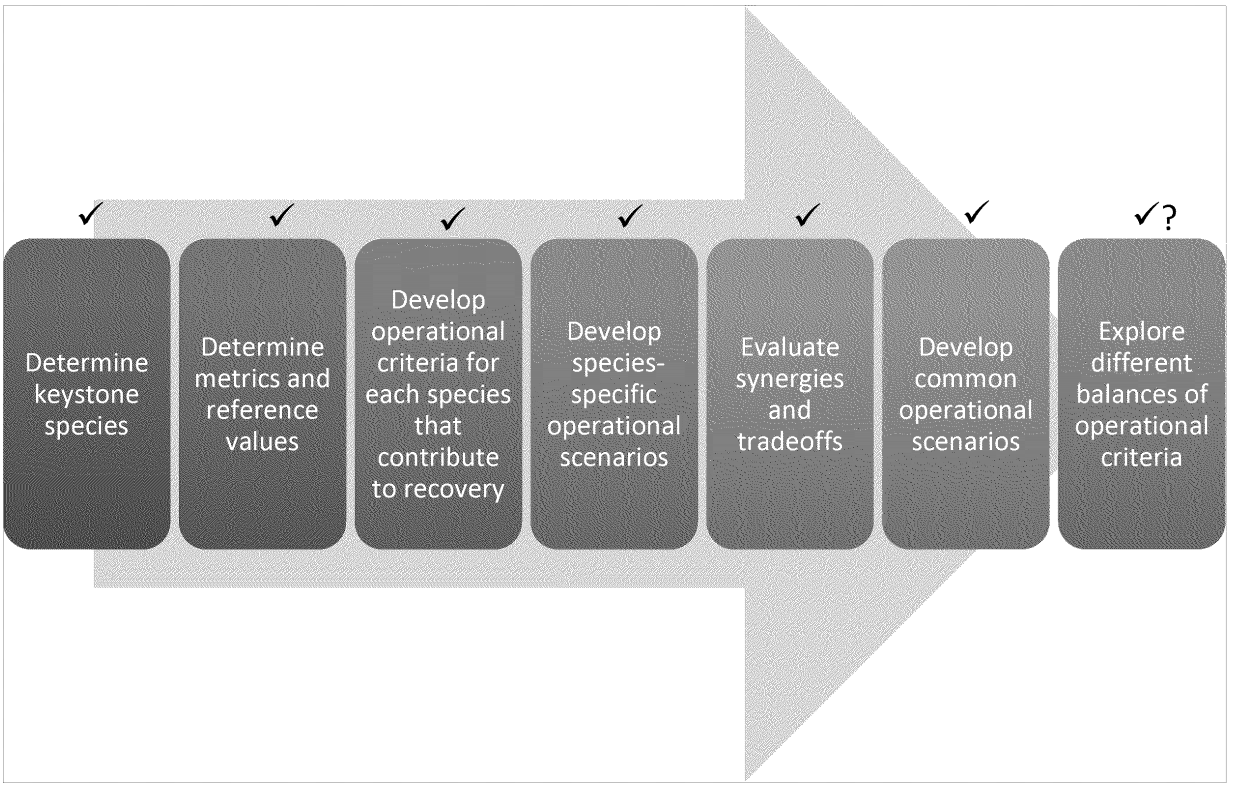
DRAFT

May 17, 2012

Analysis Overview

- Goals of analysis
  - Determine the operational parameters and metrics for the main species that drive operations
  - Identify synergies and tradeoffs amongst species operational targets
  - Develop scenarios that integrate operational targets for all species that contribute to recovery
  - Identify areas of uncertainty and explore the sensitivity of water operations to these parameters
- All analyses performed with Jan 2010 proposed operations for BDCP (dual conveyance)
- All analyses performed with Early Long-Term assumptions (climate and sea level change, demand growth)

Analytical Approach



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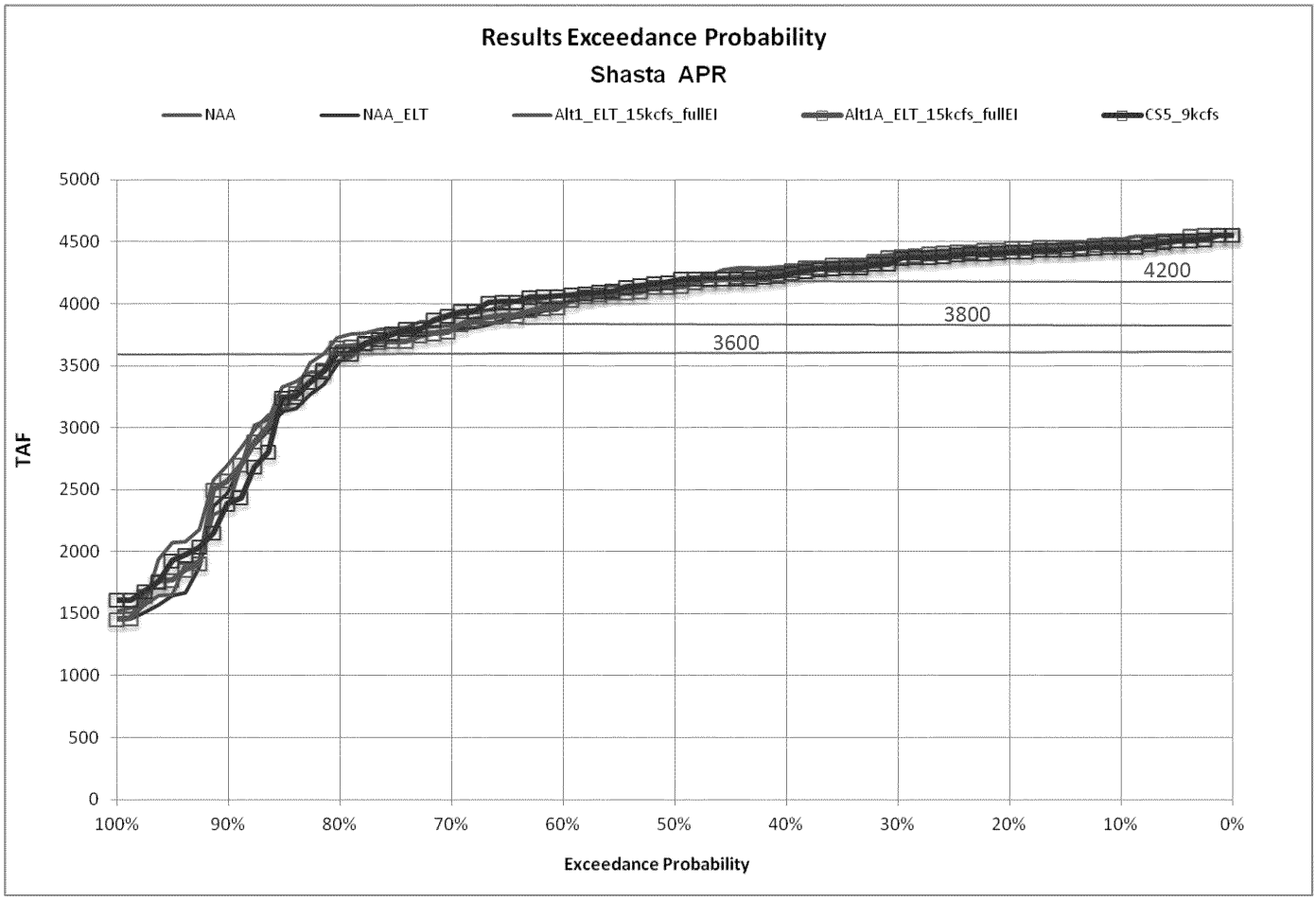
7 Keystone Species Selected for Analysis

- Species for which significant effect on operational parameters may be expected
- 7 keystone species considered in analysis
  - Delta smelt
  - Longfin smelt
  - Winter run chinook
  - Spring run chinook
  - Fall and late-fall run chinook
  - San Joaquin salmonids
  - White and green sturgeon

Key Operational Parameters Considered

- ***Shasta April and September storage*** targets to develop and manage the available cold water pool
- ***Keswick release targets*** to provide flows necessary for temperature control and enhancing ecosystem
- ***Old and Middle River flows*** along with the ***Head of Old River Barrier*** operations to protect against entrainment risk
- ***Delta outflow and X2*** criteria to enhance the suitable habitat availability
- ***North delta diversion bypass flows*** to reduce the risk of increased reverse flows on Sacramento River downstream of Georgiana Slough

Shasta End of April Storage



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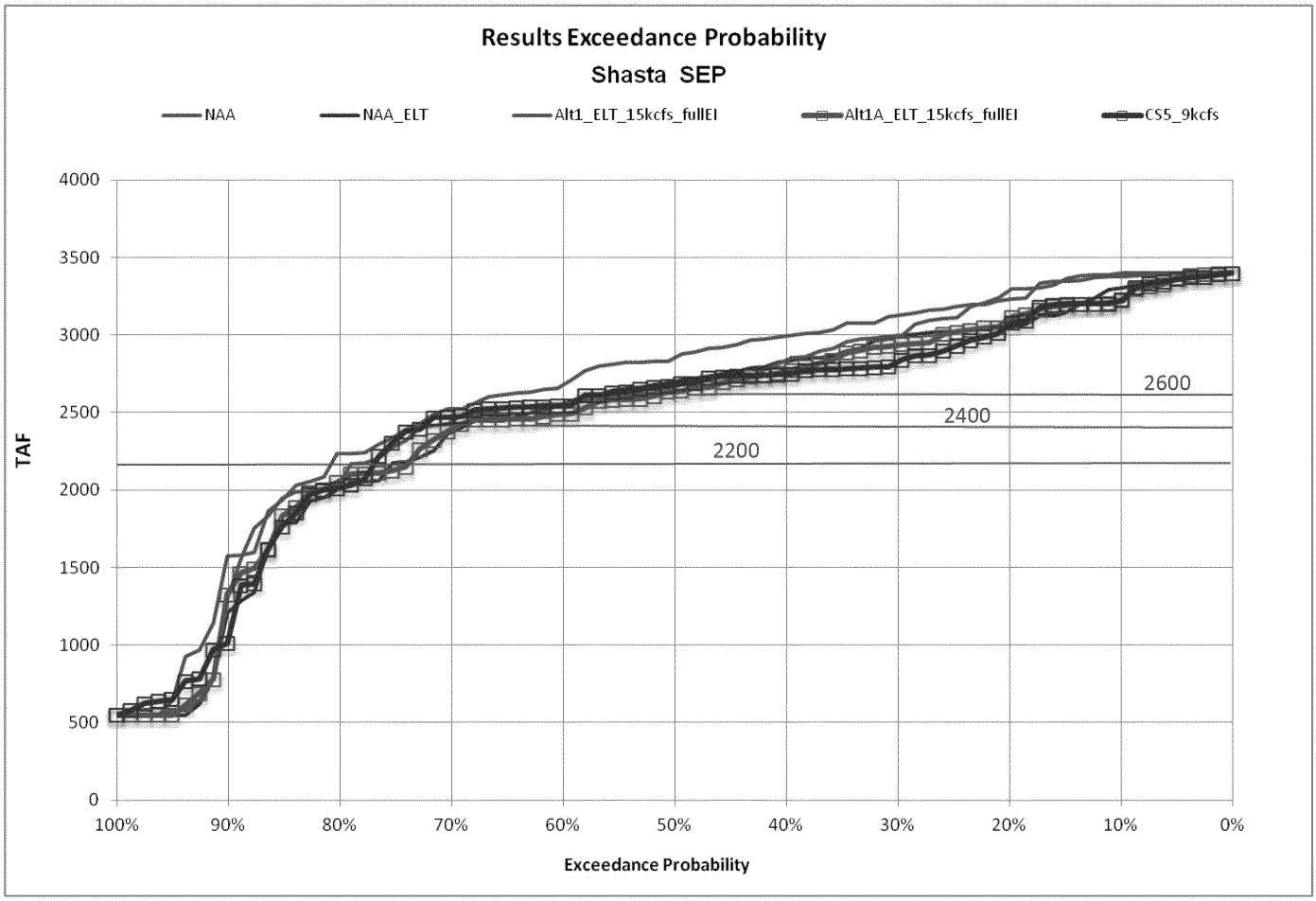
Shasta End of September Storage



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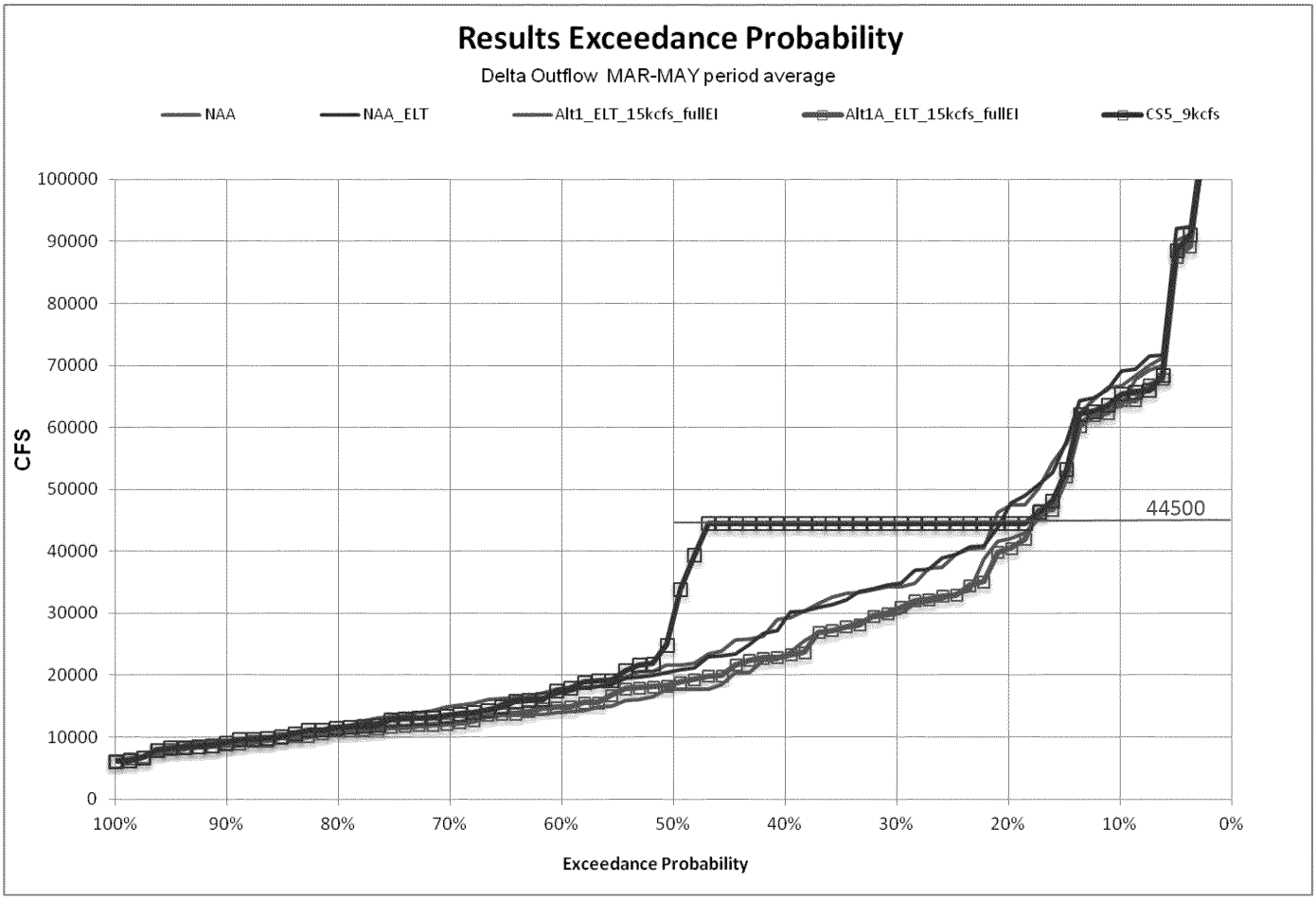
Spring Delta Outflow (Mar-May)



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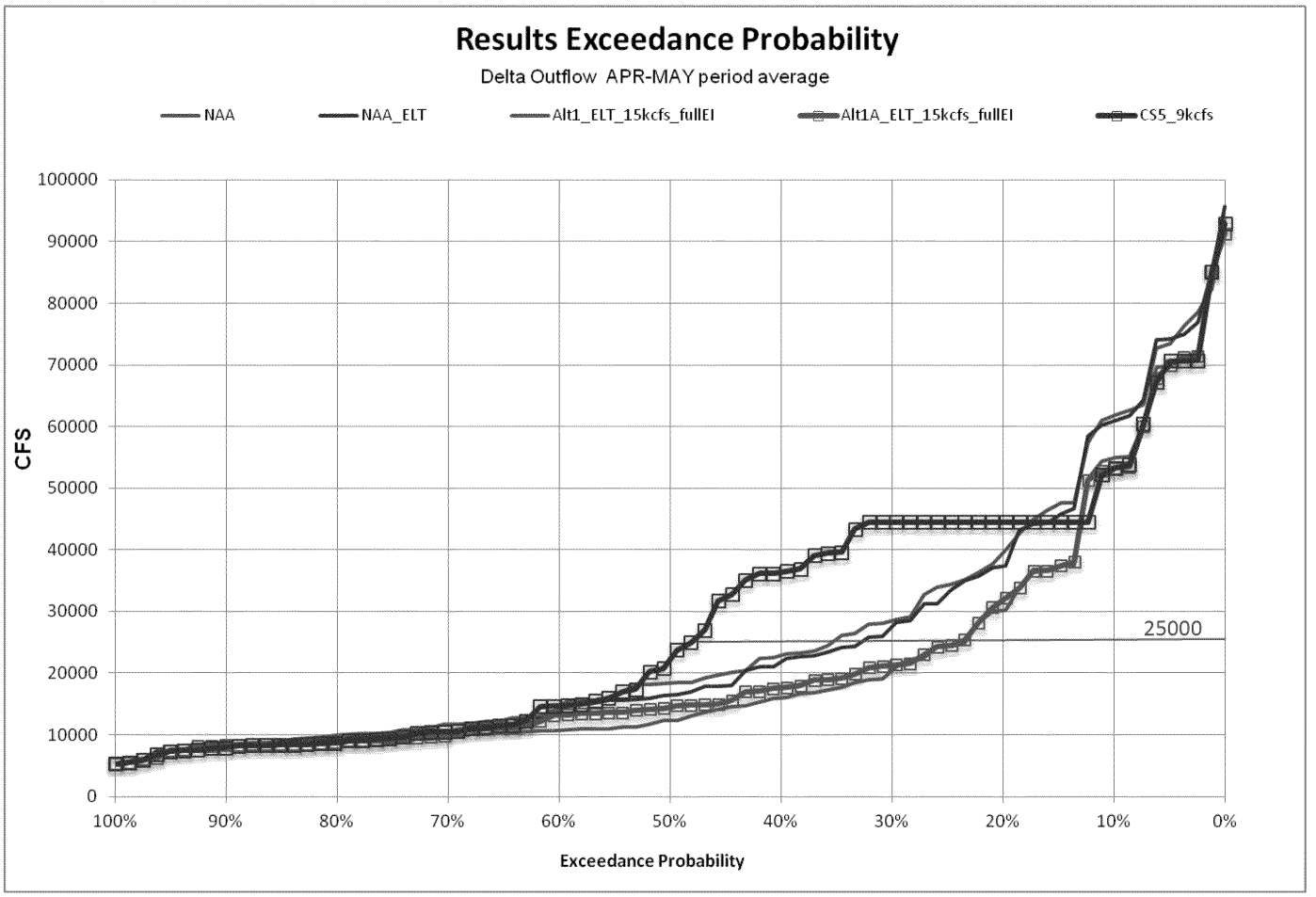
Spring Delta Outflow (Apr-May)



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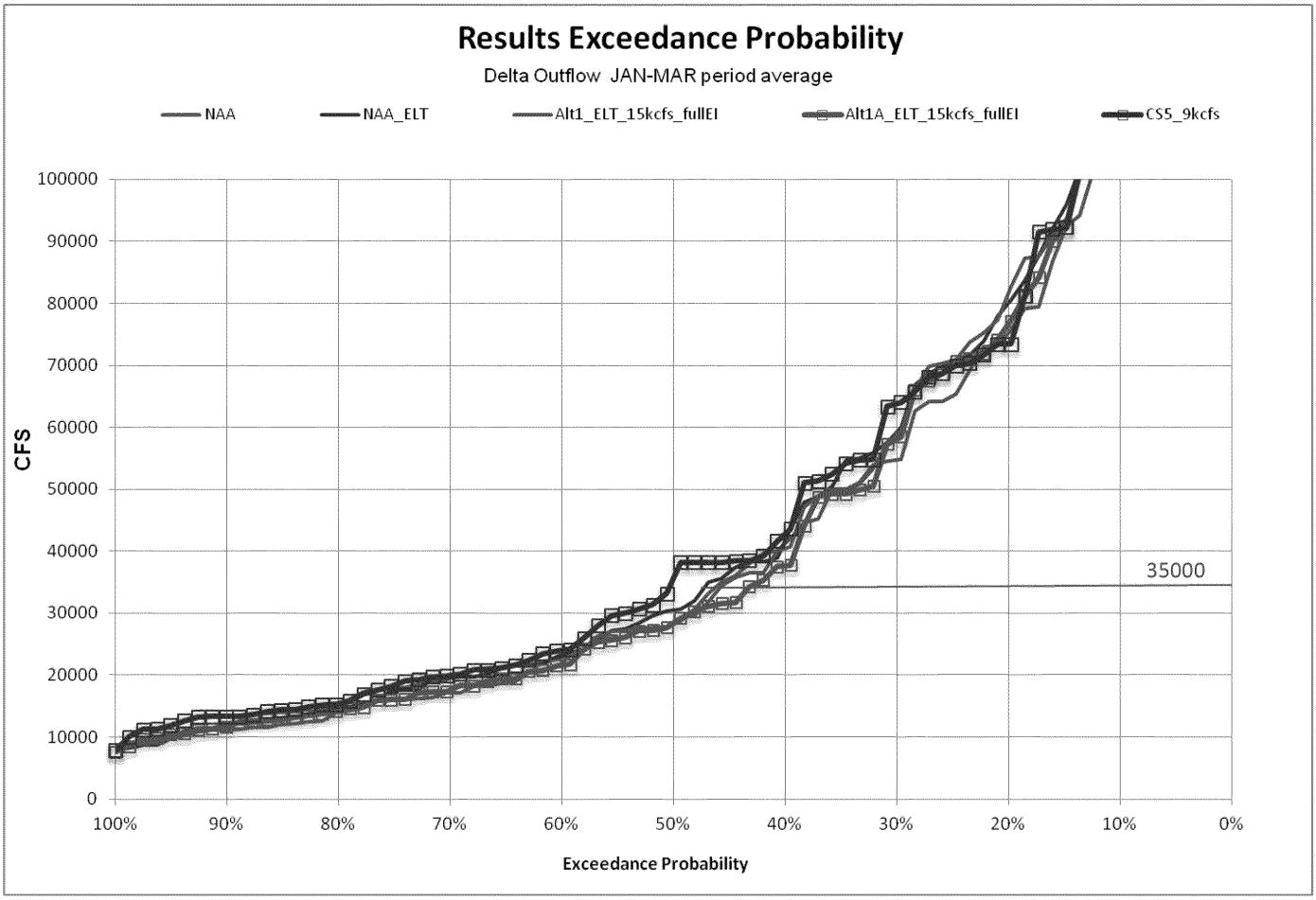
Spring Delta Outflow (Jan-Mar)



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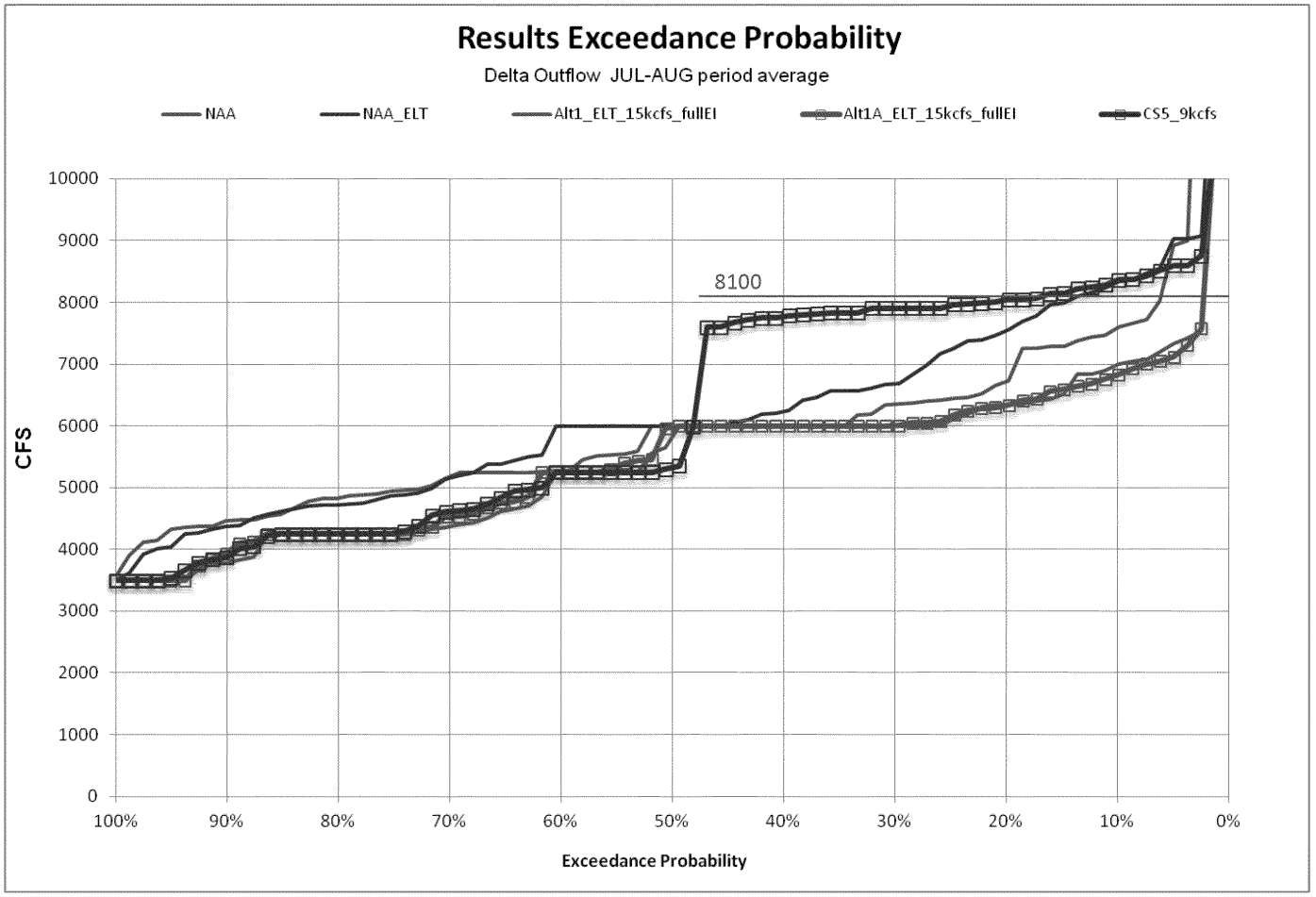
Summer Delta Outflow (Jul-Aug)



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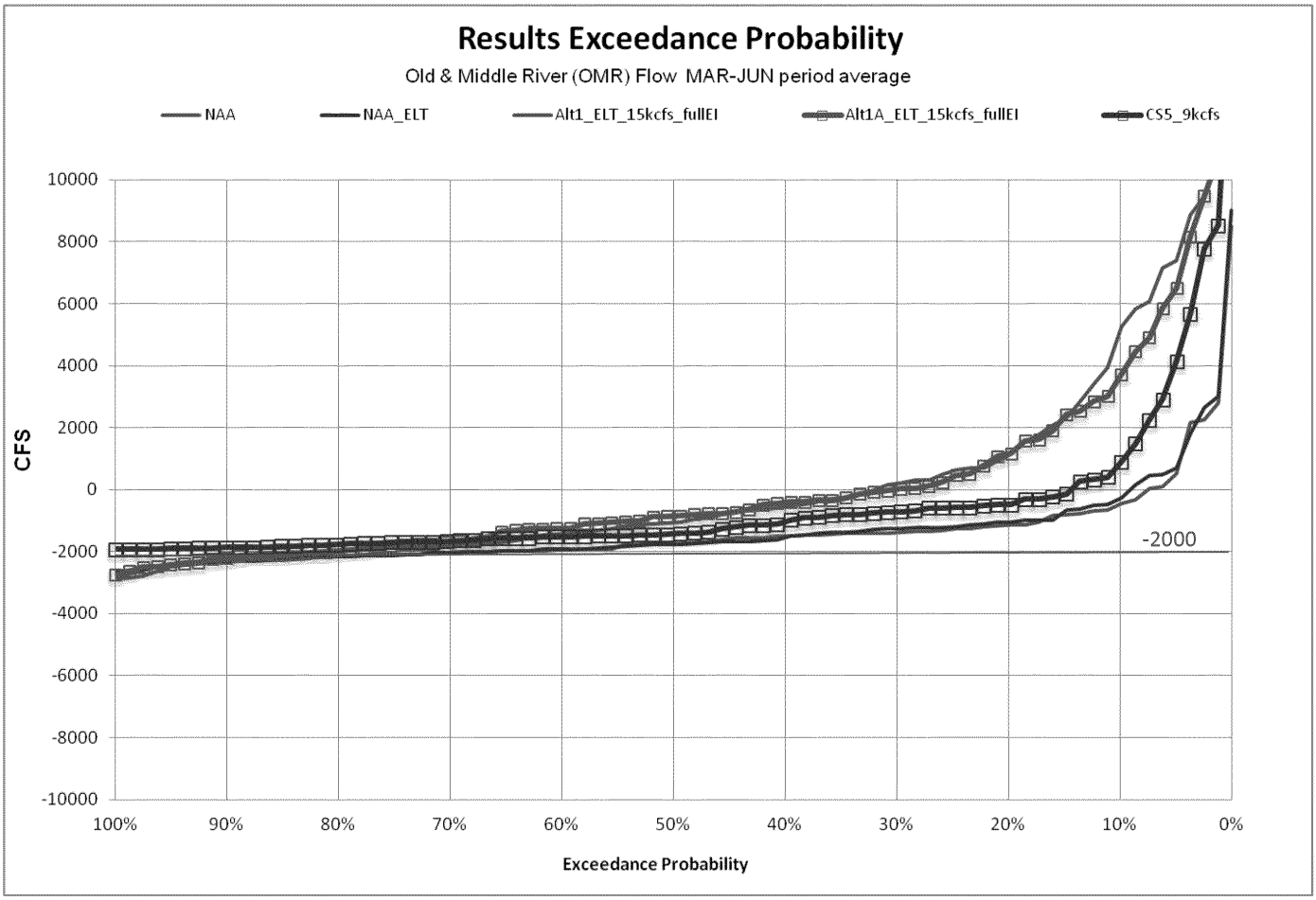
Spring Old and Middle River Flows



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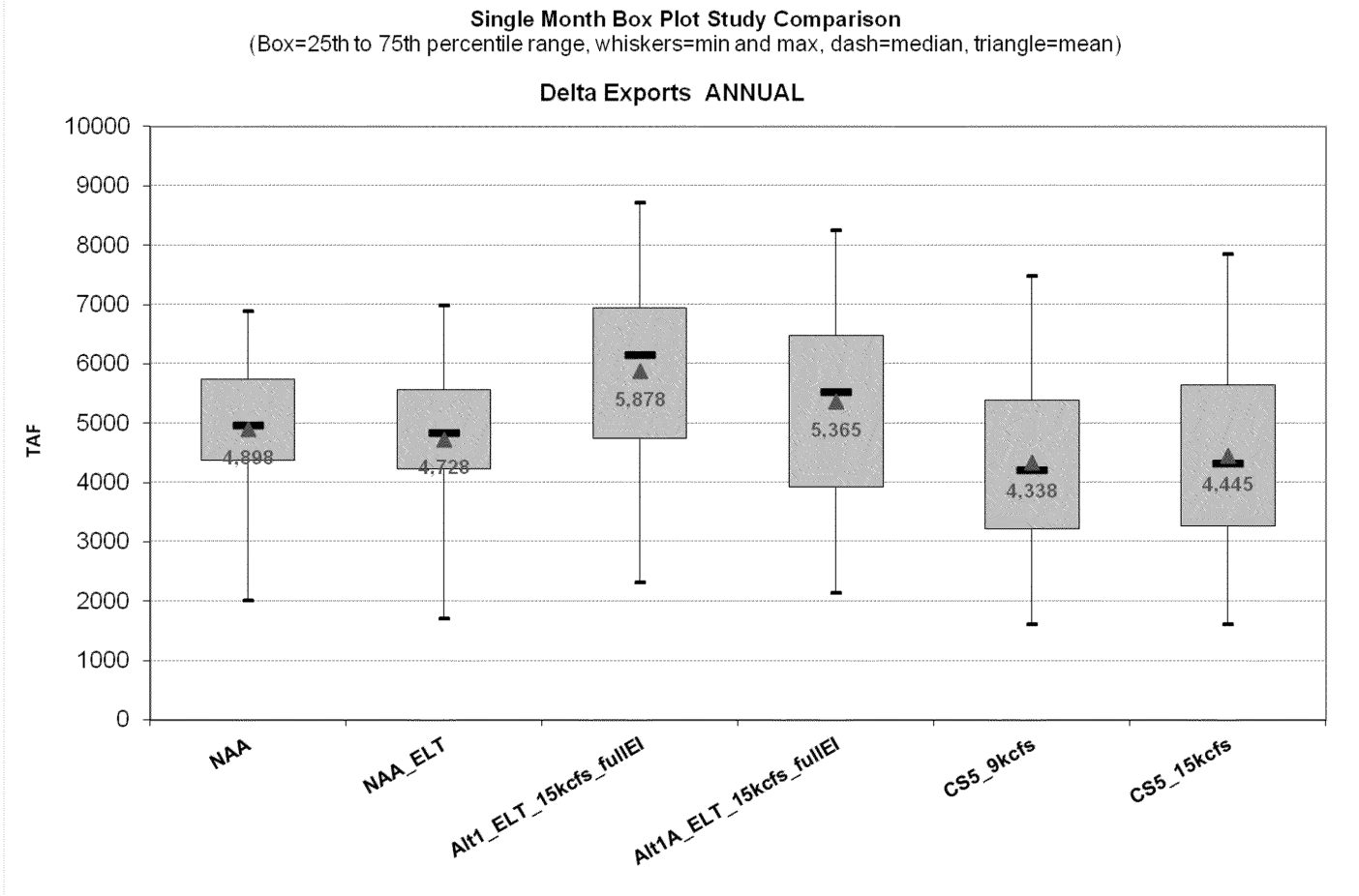
Annual Delta Exports



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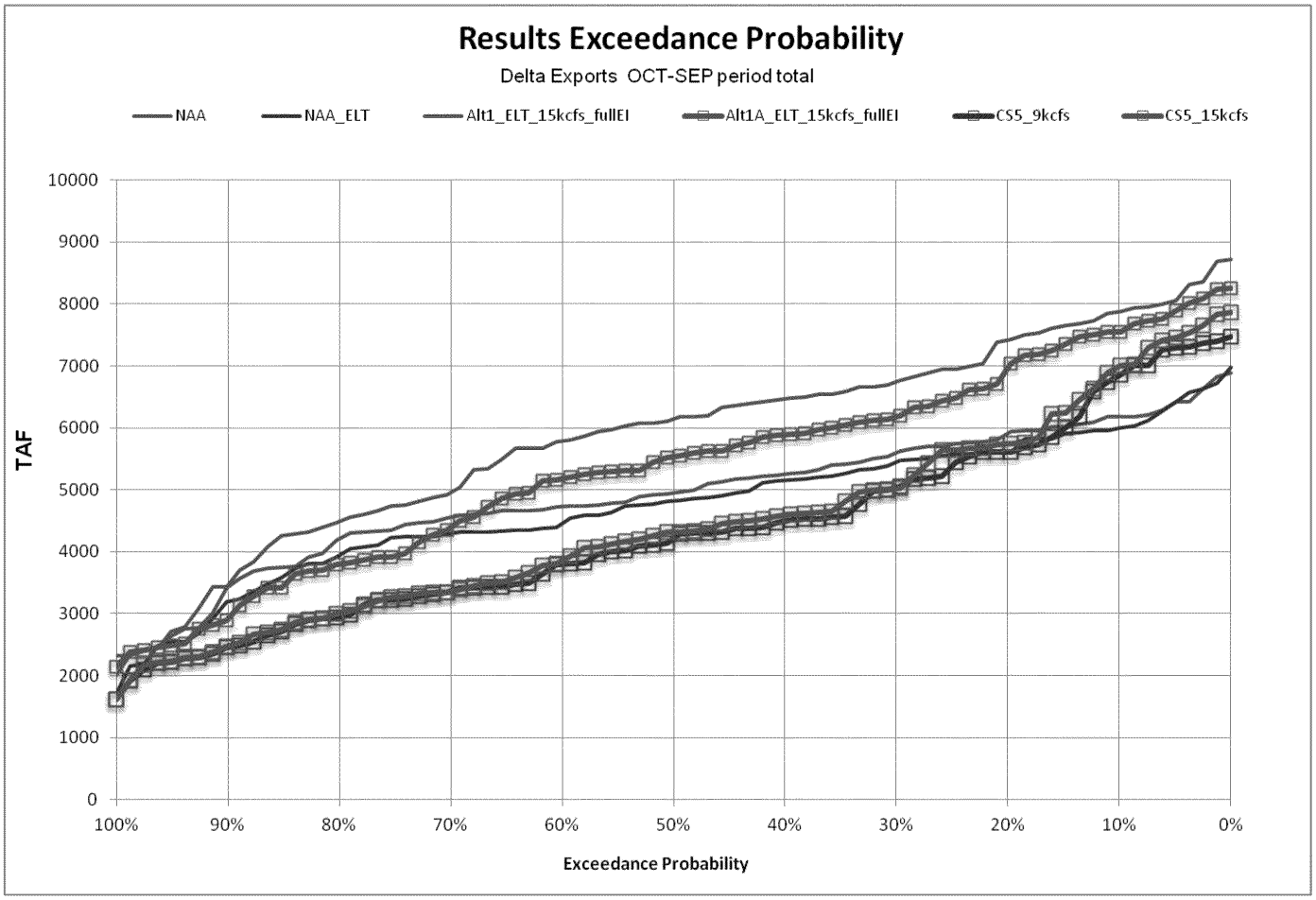
Annual Delta Exports Reliability



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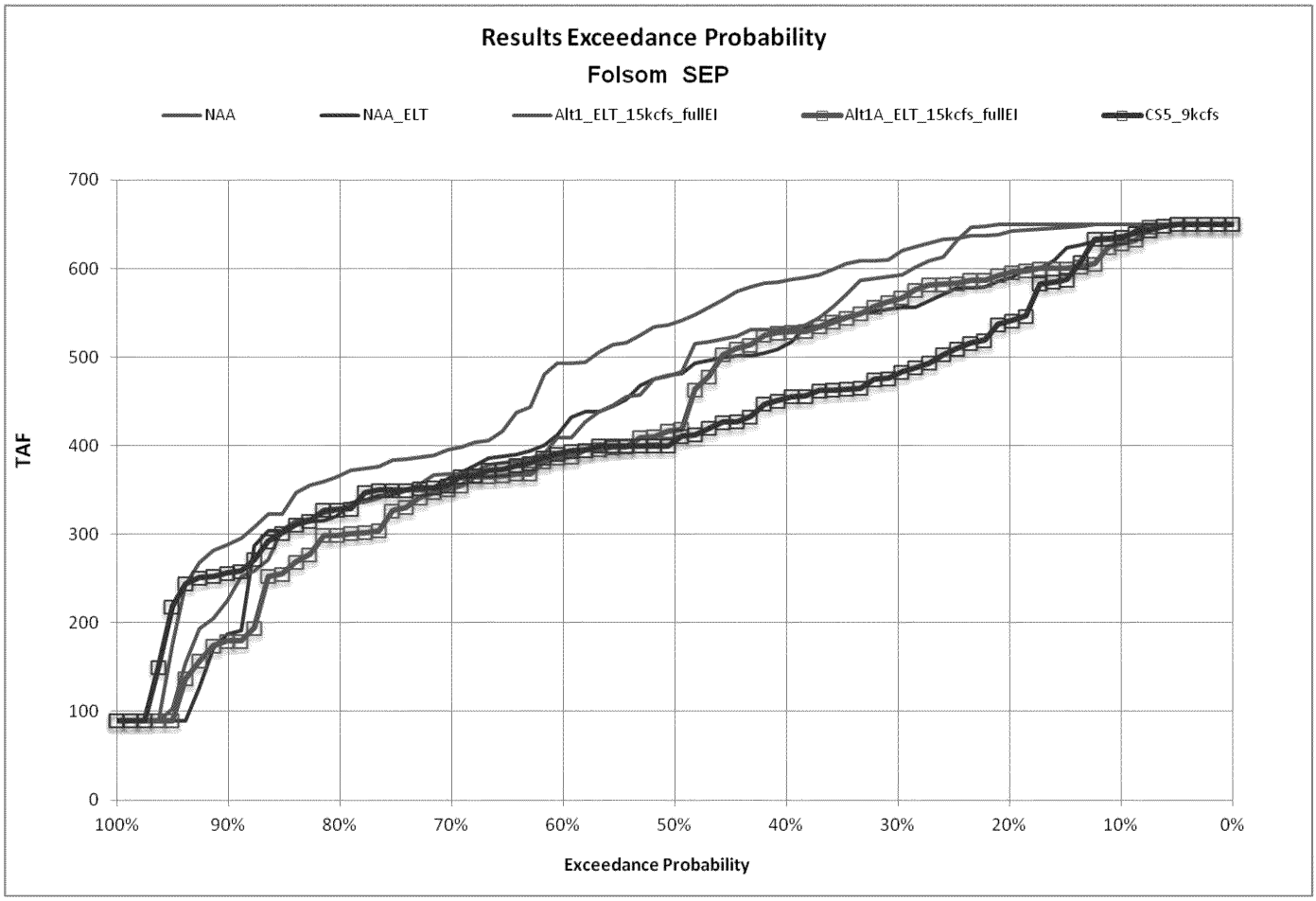
Folsom End of September Storage



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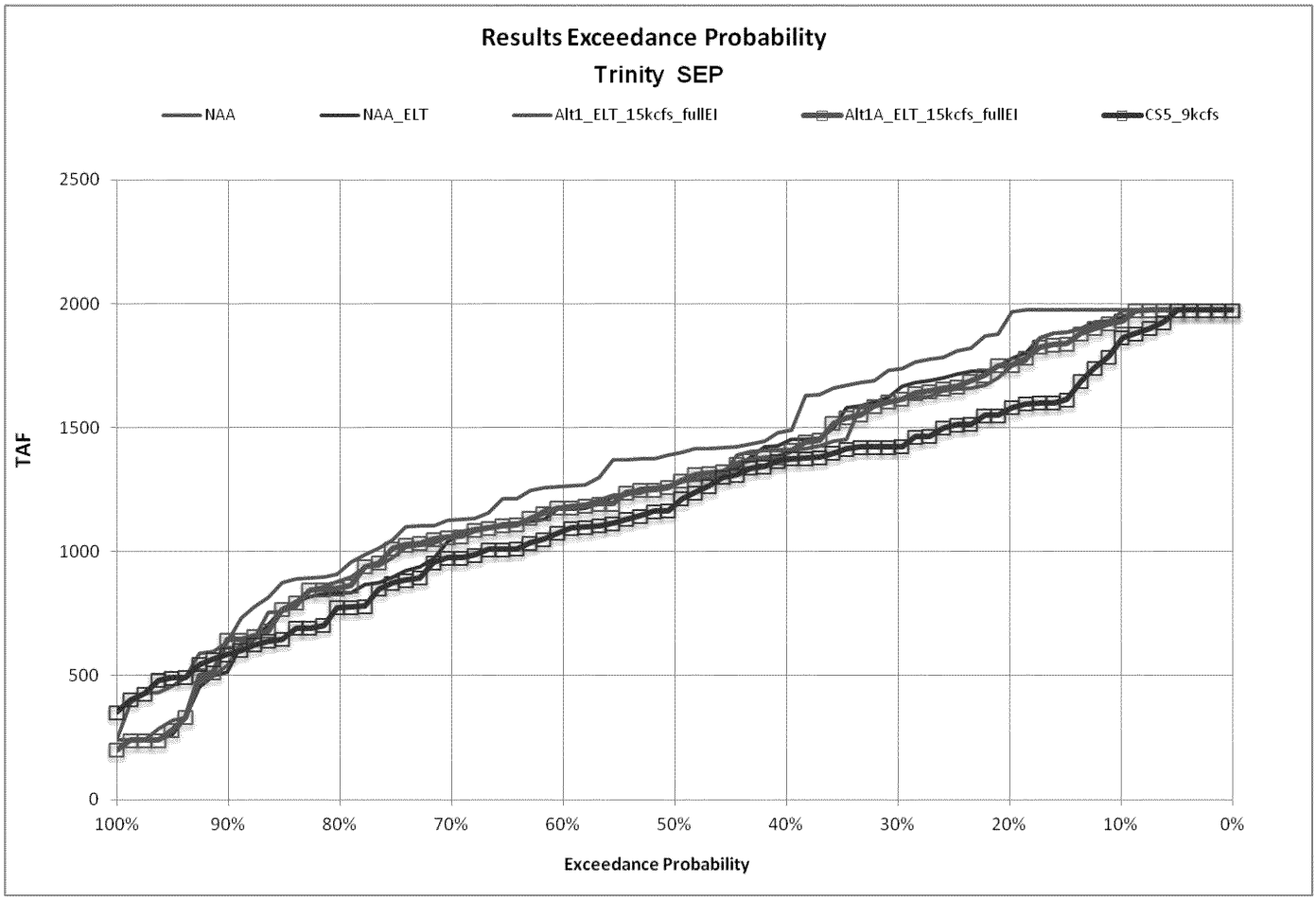
Trinity End of September Storage



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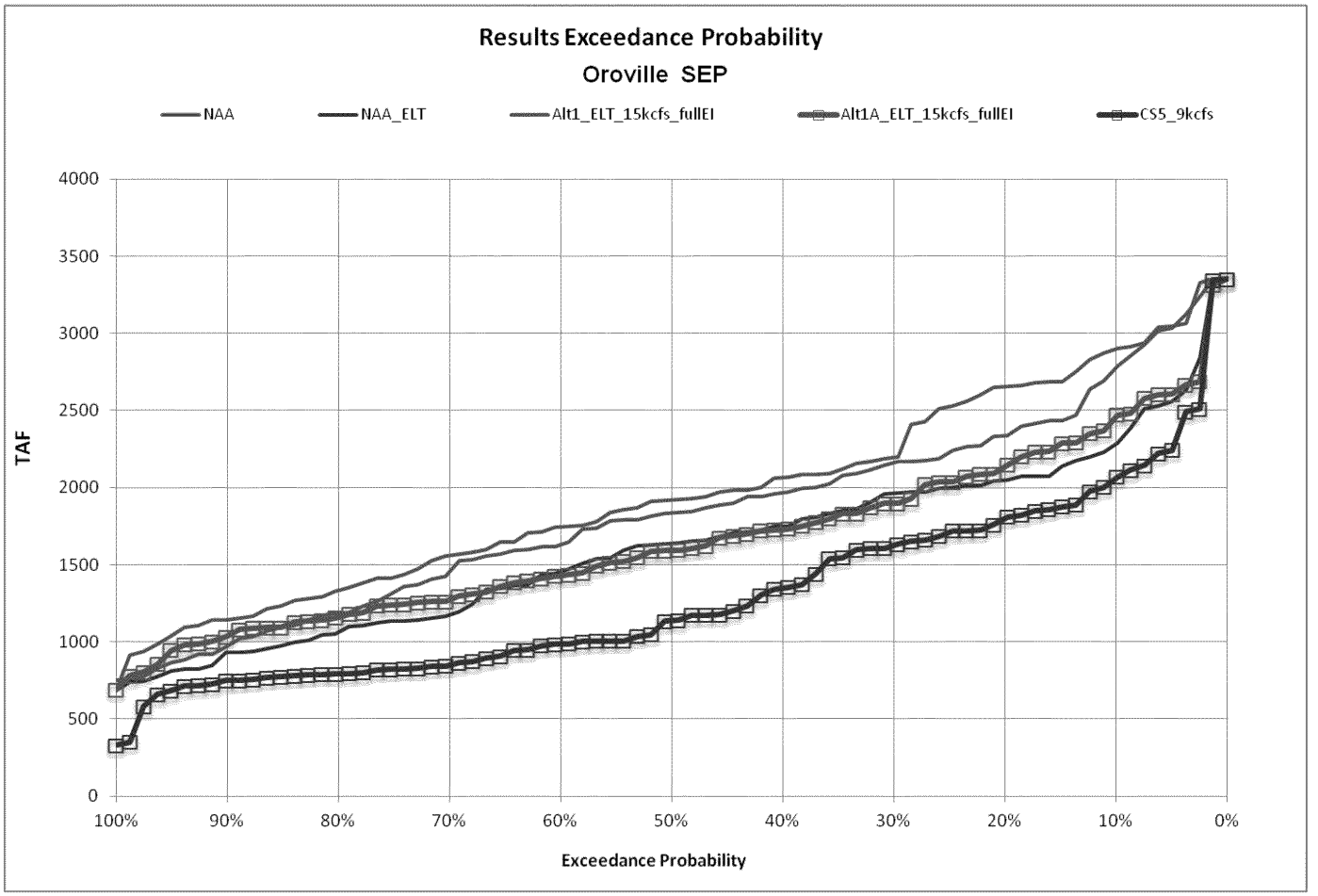
Oroville End of September Storage



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Conclusions - Smelts

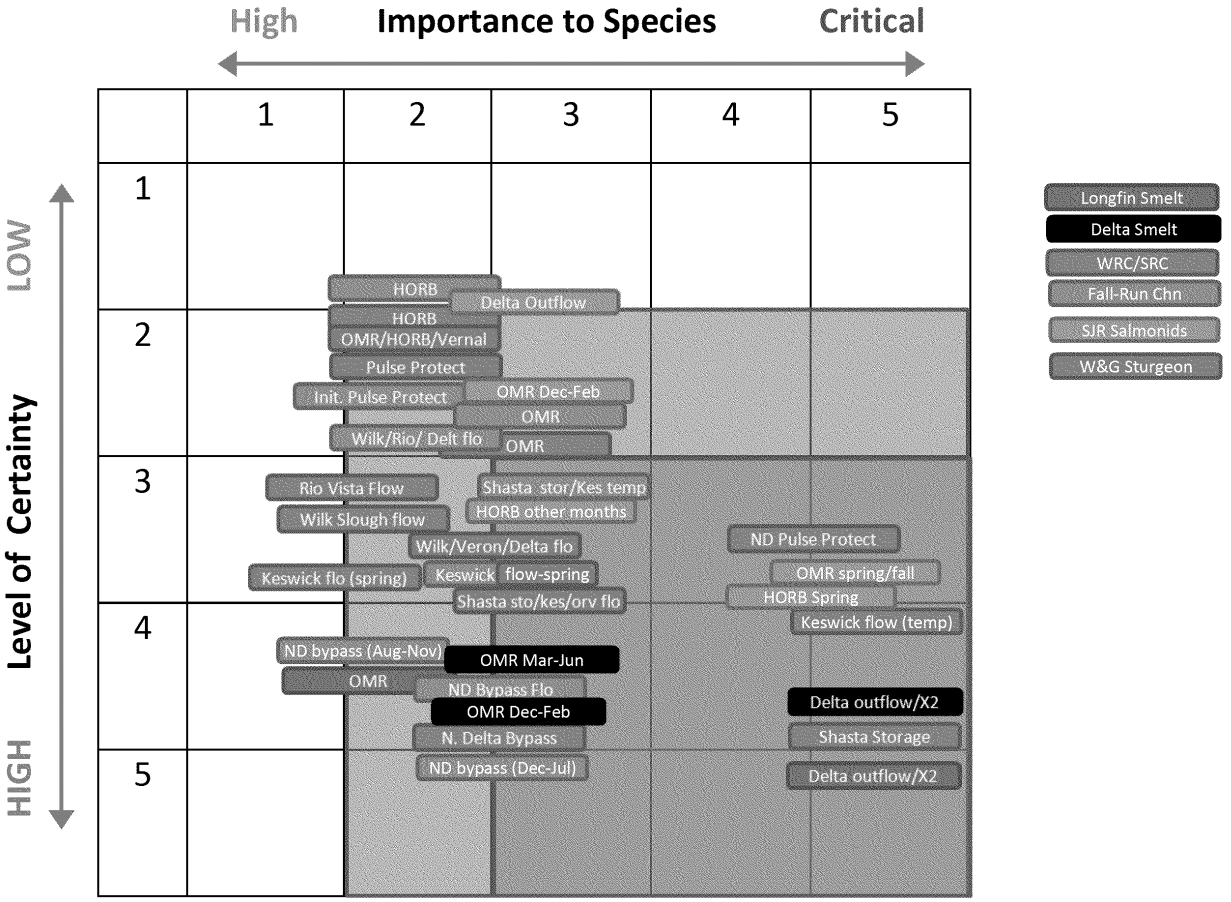
- Does CS5 scenario meet contribution towards recovery?
  - South Delta entrainment criteria meet
  - Meets seasonal outflow criteria for Delta smelt
  - Meets spring outflow objectives for Longfin smelt
  - CS5 provides for improved outflow without worsening Shasta cold water pool RPA baseline

Conclusions - Salmonids

- Does CS5 scenario meet contribution towards recovery?
  - San Joaquin salmonids criteria met
  - CS5 provides for improved outflow without worsening Shasta cold water pool RPA baseline
  - Uncertainty in summer time Keswick flows for temperature – needs analysis
  - WR criteria not always met – may not be possible within constraints to contribute to recovery
  - Oroville and Trinity results need further review
  - Questions remain re: Fall-run spring flow criteria

Uncertainty in Operations

- Teams prepared assessment of the uncertainty and importance of various operational parameters
- Matrix was prepared to highlight those areas of greater or lesser certainty



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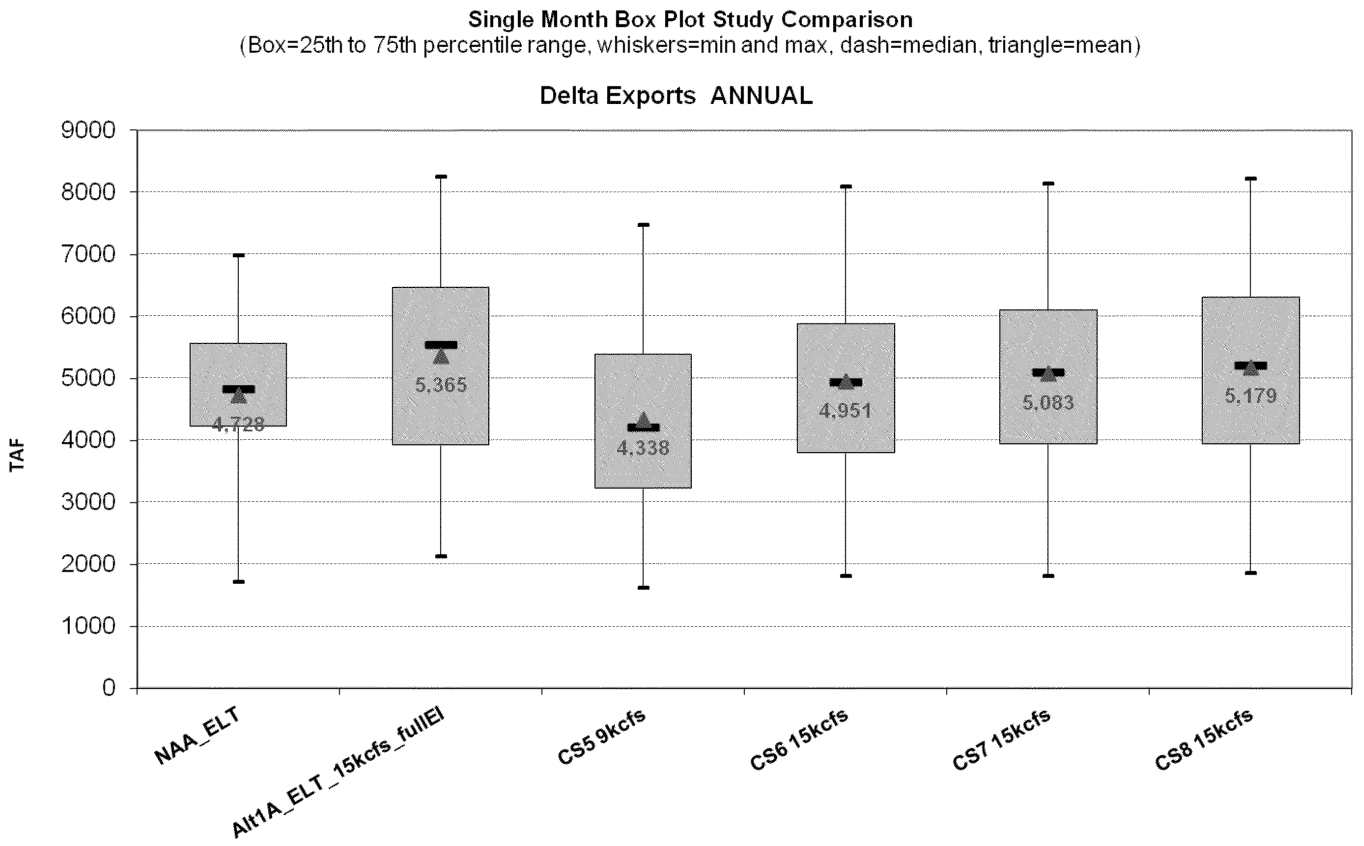
Sensitivity of Operations

- Combined Species run 5
  - Includes all water operations for all species
- Combined Species run 6
  - No July-August outflow for delta smelt
  - Uses SJR salmonid OMR criteria (> -2500/-2000 cfs) for March-May
  - Replaces spring outflow requirements with 25 kcfs during March-May
  - No July-Nov additional north delta bypass flows
- Combined Species run 7
  - January-June OMR per Alternative 1A
  - Spring north delta bypass flows set at 15 kcfs
- Combined Species run 8
  - Spring outflow per Alternative 1A (D1641)
  - North delta diversion bypass flows per Alternative 1A

Delta Exports



Metrics for Smelt

Longfin Smelt

Bio Obj	Variable	Units	Year Type	nditi	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Juvenile Entrainment Projection - Dec	OMR	CFS	0	>=	-5010	13	17	28	39	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	0	>=	-3510	43	41	60	88	100	100	80	80
Juvenile Entrainment Projection - Feb5	OMR	CFS	0	>=	-3510	44	46	80	77	100	100	74	74
Juvenile Entrainment Projection - Mar1	OMR	CFS	0	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - May2	OMR	CFS	0	>=	-5010	100	100	100	100	100	100	100	100
Delta Habitat - MarMay1	Delta_Outflow	CFS	0	>=	44400	22	21	18	18	48	18	18	18
Delta Habitat - MarMay1	Delta_Outflow	CFS	0	>=	24990	45	44	39	38	50	50	50	38

Target is 50%

Delta Smelt

Bio Obj	Variable	Units	Year Type	nditi	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Juvenile Entrainment Projection - Dec	OMR	CFS	0	>=	-5010	13	17	28	39	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	0	>=	-3510	43	41	60	88	100	100	80	80
Juvenile Entrainment Projection - Feb5	OMR	CFS	0	>=	-3510	44	46	80	77	100	100	74	74
Juvenile Entrainment Projection - Mar1	OMR	CFS	0	>=	-2010	27	26	73	71	100	66	66	67
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-2010	100	100	67	100	100	100	100	100
Juvenile Entrainment Projection - May2	OMR	CFS	0	>=	-2010	100	100	72	100	100	100	100	100
Juvenile Entrainment Projection - Jun2	OMR	CFS	0	>=	-2010	10	10	39	38	27	30	30	29
Delta Habitat - JulAug1	X2	KM	1	<=	82	88	100	54	69	100	62	65	62
Delta Habitat - JulAug2	X2	KM	2	<=	82	92	83	25	58	100	75	58	58

Metrics for Winter Run

Bio Obj	Variable	Units	ear	Typ	onditio	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	ALT1_9kcfs	CS5	CS6	CS7	CS8
Shasta Coldwater Pool Setup1	Shasta_Stor	TAF	0		>=	4200	49	45	48	46	48	50	62	62	62
Shasta Coldwater Pool Setup2	Shasta_Stor	TAF	0		>=	3800	76	70	73	71	72	72	78	78	79
Shasta Coldwater Pool Setup3	Shasta_Stor	TAF	0		>=	3600	80	79	79	80	79	78	84	83	83
Shasta Coldwater Pool Setup4	Shasta_Stor	TAF	0		>=	3000	87	85	88	87	88	85	88	88	88
Shasta Coldwater Carryover1	Shasta_Stor	TAF	0		>=	2600	67	59	55	57	57	59	70	66	67
Shasta Coldwater Carryover2	Shasta_Stor	TAF	0		>=	2400	73	70	72	70	72	72	84	83	84
Shasta Coldwater Carryover3	Shasta_Stor	TAF	0		>=	2200	80	73	77	73	78	77	88	87	87
Shasta Coldwater Carryover4	Shasta_Stor	TAF	0		>=	1900	85	83	84	83	85	83	90	89	89
Juvenile Entrainment Projection - Oct	OMR	CFS	0		>=	-5010	24	45	33	100	35	100	100	100	100
Juvenile Entrainment Projection - Nov	OMR	CFS	0		>=	-5010	40	38	39	100	45	100	100	100	100
Juvenile Entrainment Projection - Dec	OMR	CFS	0		>=	-5010	13	17	28	39	28	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	1		>=	-10	8	12	77	69	50	73	69	69	73
Juvenile Entrainment Projection - Jan2	OMR	CFS	2		>=	-3510	58	67	75	100	75	100	100	100	100
Juvenile Entrainment Projection - Jan3	OMR	CFS	3		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan4	OMR	CFS	4		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan5	OMR	CFS	5		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb1	OMR	CFS	1		>=	-10	19	23	100	100	85	81	92	92	100
Juvenile Entrainment Projection - Feb2	OMR	CFS	2		>=	-3510	67	67	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb3	OMR	CFS	3		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb4	OMR	CFS	4		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb5	OMR	CFS	5		>=	-5010	100	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Mar1	OMR	CFS	1		>=	-10	15	19	96	88	92	85	85	85	81
Juvenile Entrainment Projection - Mar2	OMR	CFS	2		>=	-10	8	8	75	83	50	42	58	58	75
Juvenile Entrainment Projection - Mar3	OMR	CFS	3		>=	-3510	43	50	86	100	100	100	100	100	100
Juvenile Entrainment Projection - Mar4	OMR	CFS	4		>=	-3510	78	89	94	100	94	100	100	100	100
Juvenile Entrainment Projection - Mar5	OMR	CFS	5		>=	-3510	75	92	92	100	92	100	100	100	100
Juvenile Entrainment Projection - Apr1	OMR	CFS	0		>=	-2010	100	100	67	100	66	100	100	100	100
Juvenile Entrainment Projection - May1	OMR	CFS	0		>=	-2010	100	100	72	100	74	100	100	100	100

Metrics for Spring Run

Bio Obj	Variable	Units	ear Typ	onditic	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Shasta Coldwater Pool Setup1	Shasta_Stor	TAF	0	>=	4200	49	45	48	46	50	62	62	62
Shasta Coldwater Pool Setup2	Shasta_Stor	TAF	0	>=	4000	65	60	60	60	67	74	74	74
Shasta Coldwater Pool Setup3	Shasta_Stor	TAF	0	>=	3800	76	70	73	71	72	78	78	79
Shasta Coldwater Pool Setup4	Shasta_Stor	TAF	0	>=	3000	87	85	88	87	85	88	88	88
Shasta Coldwater Carryover1	Shasta_Stor	TAF	0	>=	2600	67	59	55	57	59	70	66	67
Shasta Coldwater Carryover2	Shasta_Stor	TAF	0	>=	2500	71	63	66	65	68	78	78	79
Shasta Coldwater Carryover3	Shasta_Stor	TAF	0	>=	2400	73	70	72	70	72	84	83	84
Shasta Coldwater Carryover4	Shasta_Stor	TAF	0	>=	1900	85	83	84	83	83	90	89	89
Juvenile Entrainment Projection - Feb1	OMR	CFS	1	>=	-10	19	23	100	100	81	92	92	100
Juvenile Entrainment Projection - Feb2	OMR	CFS	2	>=	-3510	67	67	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb3	OMR	CFS	3	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb4	OMR	CFS	4	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb5	OMR	CFS	5	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Mar1	OMR	CFS	1	>=	-10	15	19	96	88	85	85	85	81
Juvenile Entrainment Projection - Mar2	OMR	CFS	2	>=	-10	8	8	75	83	42	58	58	75
Juvenile Entrainment Projection - Mar3	OMR	CFS	3	>=	-3510	43	50	86	100	100	100	100	100
Juvenile Entrainment Projection - Mar4	OMR	CFS	4	>=	-3510	78	89	94	100	100	100	100	100
Juvenile Entrainment Projection - Mar5	OMR	CFS	5	>=	-3510	75	92	92	100	100	100	100	100
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-2010	100	100	67	100	100	100	100	100
Juvenile Entrainment Projection - May1	OMR	CFS	0	>=	-2010	100	100	72	100	100	100	100	100
Juvenile Entrainment Projection - Jun1	OMR	CFS	0	>=	-3510	54	59	89	100	100	100	100	100

Metrics for Fall and Late Fall Run

Bio Obj	Variable	Units	ear Typ	nditi	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Shasta Coldwater Pool Setup1	Shasta_Stor	TAF	0	>=	4200	49	45	48	46	50	62	62	62
Shasta Coldwater Pool Setup2	Shasta_Stor	TAF	0	>=	3800	76	70	73	71	72	78	78	79
Shasta Coldwater Pool Setup3	Shasta_Stor	TAF	0	>=	3600	80	79	79	80	78	84	83	83
Shasta Coldwater Pool Setup4	Shasta_Stor	TAF	0	>=	3000	87	85	88	87	85	88	88	88
Shasta Coldwater Carryover1	Shasta_Stor	TAF	0	>=	2600	67	59	55	57	59	70	66	67
Shasta Coldwater Carryover2	Shasta_Stor	TAF	0	>=	2400	73	70	72	70	72	84	83	84
Shasta Coldwater Carryover3	Shasta_Stor	TAF	0	>=	2200	80	73	77	73	77	88	87	87
Shasta Coldwater Carryover4	Shasta_Stor	TAF	0	>=	1900	85	83	84	83	83	90	89	89
Juvenile Entrainment Projection - Nov	OMR	CFS	0	>=	-5010	40	38	39	100	100	100	100	100
Juvenile Entrainment Projection - Dec	OMR	CFS	0	>=	-5010	13	17	28	39	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	1	>=	-10	8	12	77	69	73	69	69	73
Juvenile Entrainment Projection - Jan2	OMR	CFS	2	>=	-3510	58	67	75	100	100	100	100	100
Juvenile Entrainment Projection - Jan3	OMR	CFS	3	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan4	OMR	CFS	4	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan5	OMR	CFS	5	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb1	OMR	CFS	1	>=	-10	19	23	100	100	81	92	92	100
Juvenile Entrainment Projection - Feb2	OMR	CFS	2	>=	-3510	67	67	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb3	OMR	CFS	3	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb4	OMR	CFS	4	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb5	OMR	CFS	5	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Mar1	OMR	CFS	1	>=	-10	15	19	96	88	85	85	85	81
Juvenile Entrainment Projection - Mar2	OMR	CFS	2	>=	-10	8	8	75	83	42	58	58	75
Juvenile Entrainment Projection - Mar3	OMR	CFS	3	>=	-3510	43	50	86	100	100	100	100	100
Juvenile Entrainment Projection - Mar4	OMR	CFS	4	>=	-3510	78	89	94	100	100	100	100	100
Juvenile Entrainment Projection - Mar5	OMR	CFS	5	>=	-3510	75	92	92	100	100	100	100	100
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-2010	100	100	67	100	100	100	100	100
Juvenile Entrainment Projection - May1	OMR	CFS	0	>=	-2010	100	100	72	100	100	100	100	100
Juvenile Entrainment Projection - Jun1	OMR	CFS	0	>=	-3510	54	59	89	100	100	100	100	100
Delta Habitat - JanMar1	Delta_Outflow	CFS	0	>=	34990	46	48	45	43	50	41	41	43

Target is 47%

Metrics for White & Green Sturgeon

Bio Obj	Variable	Units	Year Type	onditic	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Shasta Coldwater Pool Setup1	Shasta_Stor	TAF	0	>=	4200	49	45	48	46	50	62	62	62
Shasta Coldwater Pool Setup2	Shasta_Stor	TAF	0	>=	3800	76	70	73	71	72	78	78	79
Shasta Coldwater Pool Setup3	Shasta_Stor	TAF	0	>=	3600	80	79	79	80	78	84	83	83
Shasta Coldwater Pool Setup4	Shasta_Stor	TAF	0	>=	3000	87	85	88	87	85	88	88	88
Shasta Coldwater Carryover1	Shasta_Stor	TAF	0	>=	2600	67	59	55	57	59	70	66	67
Shasta Coldwater Carryover2	Shasta_Stor	TAF	0	>=	2400	73	70	72	70	72	84	83	84
Shasta Coldwater Carryover3	Shasta_Stor	TAF	0	>=	2200	80	73	77	73	77	88	87	87
Shasta Coldwater Carryover4	Shasta_Stor	TAF	0	>=	1900	85	83	84	83	83	90	89	89
Juvenile Entrainment Projection - Oct	OMR	CFS	0	>=	-5010	24	45	33	100	100	100	100	100
Juvenile Entrainment Projection - Nov	OMR	CFS	0	>=	-5010	40	38	39	100	100	100	100	100
Juvenile Entrainment Projection - Dec	OMR	CFS	0	>=	-5010	13	17	28	39	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	1	>=	-10	8	12	77	69	73	69	69	73
Juvenile Entrainment Projection - Jan2	OMR	CFS	2	>=	-3510	58	67	75	100	100	100	100	100
Juvenile Entrainment Projection - Jan3	OMR	CFS	3	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan4	OMR	CFS	4	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Jan5	OMR	CFS	5	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb1	OMR	CFS	1	>=	-10	19	23	100	100	81	92	92	100
Juvenile Entrainment Projection - Feb2	OMR	CFS	2	>=	-3510	67	67	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb3	OMR	CFS	3	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb4	OMR	CFS	4	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Feb5	OMR	CFS	5	>=	-5010	100	100	100	100	100	100	100	100
Juvenile Entrainment Projection - Mar1	OMR	CFS	1	>=	-10	15	19	96	88	85	85	85	81
Juvenile Entrainment Projection - Mar2	OMR	CFS	2	>=	-10	8	8	75	83	42	58	58	75
Juvenile Entrainment Projection - Mar3	OMR	CFS	3	>=	-3510	43	50	86	100	100	100	100	100
Juvenile Entrainment Projection - Mar4	OMR	CFS	4	>=	-3510	78	89	94	100	100	100	100	100
Juvenile Entrainment Projection - Mar5	OMR	CFS	5	>=	-3510	75	92	92	100	100	100	100	100
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-2010	100	100	67	100	100	100	100	100
Juvenile Entrainment Projection - May1	OMR	CFS	0	>=	-2010	100	100	72	100	100	100	100	100
Juvenile Entrainment Projection - Jun1	OMR	CFS	0	>=	-3510	54	59	89	100	100	100	100	100
Juvenile Entrainment Projection - Jul	OMR	CFS	0	>=	-5010	9	6	56	43	73	33	39	45
Juvenile Entrainment Projection - Aug	OMR	CFS	0	>=	-5010	13	15	78	63	82	56	55	60
Juvenile Entrainment Projection - Sep	OMR	CFS	0	>=	-5010	18	23	76	99	95	99	96	98
Delta Habitat - AprMay1	Delta_Outflow	CFS	0	>=	24990	35	33	24	24	49	29	30	26

Target is 47%

Metrics for San Joaquin Salmonids

Bio Obj	Variable	Units	ear Ty	onditio	Threshold	NAA	NAA_ELT	ALT1_ELT	ALT1A_ELT	CS5	CS6	CS7	CS8
Juvenile Entrainment Projection - Oct1	OMR	CFS	1	>=	-3510	4	0	12	100	100	100	100	100
Juvenile Entrainment Projection - Oct2	OMR	CFS	2	>=	-3510	17	25	8	100	100	100	100	100
Juvenile Entrainment Projection - Oct3	OMR	CFS	3	>=	-5010	7	50	29	100	100	100	100	100
Juvenile Entrainment Projection - Oct4	OMR	CFS	4	>=	-5010	33	50	33	100	100	100	100	100
Juvenile Entrainment Projection - Oct5	OMR	CFS	5	>=	-5010	42	58	58	100	100	100	100	100
Juvenile Entrainment Projection - Nov1	OMR	CFS	1	>=	-3510	8	0	19	58	62	62	62	62
Juvenile Entrainment Projection - Nov2	OMR	CFS	2	>=	-3510	17	8	0	42	58	67	67	67
Juvenile Entrainment Projection - Nov3	OMR	CFS	3	>=	-5010	21	14	36	100	100	100	100	100
Juvenile Entrainment Projection - Nov4	OMR	CFS	4	>=	-5010	50	50	33	100	100	100	100	100
Juvenile Entrainment Projection - Nov5	OMR	CFS	5	>=	-5010	92	83	67	100	100	100	100	100
Juvenile Entrainment Projection - Dec1	OMR	CFS	1	>=	-3510	12	12	46	46	27	77	77	77
Juvenile Entrainment Projection - Dec2	OMR	CFS	2	>=	-3510	0	0	8	8	25	50	50	50
Juvenile Entrainment Projection - Dec3	OMR	CFS	3	>=	-5010	7	14	29	36	100	100	100	100
Juvenile Entrainment Projection - Dec4	OMR	CFS	4	>=	-5010	6	11	11	11	100	100	100	100
Juvenile Entrainment Projection - Dec5	OMR	CFS	5	>=	-5010	42	42	25	42	100	100	100	100
Juvenile Entrainment Projection - Jan1	OMR	CFS	1	>=	-10	8	12	77	69	73	69	69	73
Juvenile Entrainment Projection - Jan2	OMR	CFS	2	>=	-10	0	0	50	33	33	42	42	42
Juvenile Entrainment Projection - Jan3	OMR	CFS	3	>=	-2510	0	0	21	50	100	100	43	43
Juvenile Entrainment Projection - Jan4	OMR	CFS	4	>=	-2510	0	0	6	44	100	100	33	33
Juvenile Entrainment Projection - Jan5	OMR	CFS	5	>=	-2510	25	33	25	50	100	100	33	25
Juvenile Entrainment Projection - Feb1	OMR	CFS	1	>=	-10	19	23	100	100	81	92	92	100
Juvenile Entrainment Projection - Feb2	OMR	CFS	2	>=	-10	8	8	67	67	67	67	67	75
Juvenile Entrainment Projection - Feb3	OMR	CFS	3	>=	-2510	21	21	86	57	100	100	50	57
Juvenile Entrainment Projection - Feb4	OMR	CFS	4	>=	-2510	11	17	22	22	100	100	17	22
Juvenile Entrainment Projection - Feb5	OMR	CFS	5	>=	-2510	33	25	33	17	100	100	25	25
Juvenile Entrainment Projection - Mar1	OMR	CFS	0	>=	-2510	28	29	78	72	100	100	68	68
Juvenile Entrainment Projection - Apr1	OMR	CFS	0	>=	-2510	100	100	85	100	100	100	100	100
Juvenile Entrainment Projection - May2	OMR	CFS	0	>=	-2510	100	100	79	100	100	100	100	100
Juvenile Entrainment Projection - Jun2	OMR	CFS	0	>=	-2510	21	24	60	59	94	94	55	59